

USA/ /44 ADD  
S9.52bis

When an agreement on coordination is reached, the administration responsible for the terrestrial stations or the earth station operating in the opposite direction of transmission may send to the Bureau the information concerning those stations covered by the agreement which are intended to be notified under Nos. S11.2 or S11.9. The Bureau shall consider as notifications only that information relating to existing radiocommunication stations or to those to be brought into use within the next three years.

Reason: To specify possible onward action.

USA/ /45 MOD  
S9.55

All administrations may use correspondence, any appropriate means of telecommunication, or meetings as necessary to assist in resolving the matter, the results of which shall be communicated to and published in the Weekly Circular, as appropriate, by the Bureau.

Reason: To provide for publication of results.

USA/ /46 SUP  
S9.56

~~In exceptional cases involving networks of the fixed satellite service, the requesting administration may undertake multilateral coordination in the form of a multilateral planning meeting (MPM) in the following frequency bands:~~

~~3 700 — 4 200 MHz  
5 850 — 6 425 MHz  
10.95 — 11.20 GHz  
11.45 — 11.70 GHz  
11.70 — 12.20 GHz  
12.50 — 12.75 GHz<sup>1</sup>  
14.00 — 14.50 GHz~~

Reason: Simplification. Meetings among administrations do not require enablement within the Radio Regulations.

USA/ /47 SUP  
S9.56.1

~~<sup>1</sup> — When a fixed satellite network is to be operated in the frequency band 12.5 — 12.75 GHz as well as under No. S5.491 in the frequency band 12.2 — 12.5 GHz this provision may apply for coordination of the network.~~

Reason: Simplification. See USA/ /46.

USA/ /48 SUP  
S9.57

~~The administration seeking coordination may initiate action to convene an MPM in accordance with resolves 1 to 7 of Resolution 110 to resolve mutually the difficulties and effect the coordination of the satellite network. The results shall be regarded as coordination agreements among the administrations participating and shall in no way prejudice the rights of non-participants.~~

Reason: Simplification. See USA/ /46.

**Sub-Section IID. Action in the Event of No Decision or Disagreement Upon a Request for Coordination**

USA/ /49 MOD  
S9.60

If an administration with which coordination is sought fails to reply or to give a decision in the matter within the four-month period specified in No. MOD S9.51, ~~the requesting administration may seek the assistance of the Bureau it shall be deemed that the administration with which coordination was sought has undertaken:~~

a) that no complaint will be made in respect of any harmful interference affecting the services rendered by its space radiocommunication stations which may be caused by the use of the assignment to a station of the satellite network for which coordination was requested;

b) that its space radiocommunication stations will not cause harmful interference to the satellite network assignment for which coordination was requested.

Reason: Simplification. Administrations should approach coordination seriously, and in sufficient time that a response can be afforded within the prescribed time limit. So amending this procedure lightens both administrations' and the Bureau's workload.

USA/ /50 SUP  
S9.61

~~The Bureau, acting on a request for assistance under No. S9.60, shall forthwith request the administration concerned to give an early decision in the matter.~~

Reason: Simplification. No longer needed. Consequential to USA/ /49.

USA/ /51 SUP  
S9.62

~~If the administration concerned still does not give a decision in the matter within thirty days of the Bureau's action under No. S9.61 the provisions of Nos. S9.48 and S9.49 shall apply.~~

Reason: Simplification. No longer needed. Consequential to USA/ /49.

USA/ /52 MOD

S9.63

If there is continuing disagreement, or if any administration involved in the matter has requested the assistance of the Bureau, the latter shall seek any necessary information to enable it to assess the interference. ~~It shall communicate its conclusions to the administrations involved.~~ The Bureau shall inform the administrations concerned of the results obtained.

Reason:

To clarify by using regulatory language whose meaning has been established.

S9.65

If at the date of receipt of a notice under No. S9.64 above the Bureau has been informed of a continuing disagreement, it shall examine the notice under No. S11.33<sup>1</sup> and shall act in accordance with No. S11.38.

USA/ /53 MOD

S9.65.1

<sup>1</sup> A notice of a frequency assignment, for which coordination was requested under No. MOD S9.21 and about which there is a continuing disagreement, shall not be examined under No. S11.33; it shall, however, be examined under No. ~~S9.31~~ S11.31 ~~taking into account No. S5.45.~~

Reason:

Consequential to SUP S5.45.

General:

Notification and recording generally follow bilateral contact, where required, by administrations. By the notification stage the more difficult work is usually complete. Even so, further simplification beyond the recommendations taken by the VGE is possible in some instances.

ARTICLE S10

**Procedure for Modification of a Frequency Allotment or Assignment Plan**

The VGE developed ARTICLE S10 with the aim of simplifying the task of administrations and the Radiocommunication Bureau when modifying certain world plans. The provisions in ARTICLE S10 are intended to be a generic replacement for the modification procedures of Appendices 25, 30, and 30A of the Radio Regulations. The VGE determined that Appendices 26, 27, and 30B were fundamentally different and therefore not suitable candidates for application of ARTICLE S10. The VGE confirmed this in Recommendation No. 2/7.

VGE Recommendation No. 2/4 addresses the adoption of ARTICLE S10 to replace the ARTICLE 16 procedures that pertain solely to Appendix 25.

VGE Recommendation No. 2/5 addresses Appendices 30 and 30A with the intent of replacing the plan modification procedures contained in Article 4 of each plan with the provisions of ARTICLE S10.

If ARTICLE S10 were adopted for Appendices 25, 30, and 30A, a subsequent action under VGE Recommendation 2/6 is required to treat the development of

APPENDIX S6 by WRC-95. Further, the provisions of Chapter SIII should be considered for application to Appendices 30 and 30A instead of the current procedures for the coordination, examination, and recording of frequency assignments, excluding the provisions of ARTICLE S10 relating to plan modification.

CPM-95 spent considerable time addressing Article S10. Its results are contained in Chapter 4 paragraph 1.4 of the CPM-95 Report. The Working Party of the CPM noted the difficulties in applying this procedure to Appendices 25, 30, and 30A. A new Article T10 was developed to show how the procedure might be applied to Appendices 30 and 30A. In order to accomplish this, all the procedures that might apply to Appendix 25 were deleted. This indicates that the generic procedure for plan modification should not be included in the Radio Regulations because it is not usable without being specifically tailored for each Plan.

The United States believes that ARTICLE S10 and APPENDIX S6 are not sufficiently developed to be applied as a generic plan modification procedure. The inclusion of ARTICLE S10 in the Radio Regulations would serve no useful purpose and would add an entire article with no direct application to an existing plan.

The United States, noting the usefulness of a generic plan modification procedure to serve as a guide for the future development or modification of plans, believes that ARTICLE S10 be retained for future development and use. Therefore, the United States proposes Resolution No. USA-S10 be adopted in lieu of ARTICLE S10 and APPENDIX S6 as a means to preserve the work accomplished by the VGE and allow future radio conferences to consider its development and application. See USA/ /113 herein.

#### ARTICLE S11

##### Notification and Recording of Frequency Assignments<sup>1, 2</sup> Section I. Notification

USA/ /54 MOD  
S11.15.1

<sup>1</sup> A frequency assignment to a ~~space station~~ satellite network may be notified by one administration acting on behalf of a group of named administrations. Any further notice (modification or deletion) relating to such an assignment shall, in the absence of information to the contrary, be regarded as having been submitted on behalf of the entire group.

Reason: To continuing the practice of the notifying administration submitting typical earth stations on behalf of the entire group.

USA/ /55 MOD  
S11.16

When any administration in need of special assistance desires to seek the help of the Bureau in selecting frequencies for a station of the fixed service in the high frequency bands allocated to that service, it shall notify such characteristics as it is able from the table in **Appendix S4** and shall state the specific assistance required from the Bureau.<sup>2</sup> See also Resolution 103.

Reason: To recognise that any administration may need special assistance. It is useful to note that all Members enjoy the same rights and are subject to the same obligations per Article 3, ITU Constitution, Geneva, 1992.

## Section II. Examination of Notices and Recording of Frequency Assignments in the Master Register

USA/ /56 MOD  
S11.41

After the return of notice under No. S11.38 or S11.40, should the notifying administration resubmit the notice and insist upon its reconsideration, the Bureau shall enter the assignment provisionally in the Master Register with an indication of those administrations whose assignments were the basis of the unfavourable finding. However, the entry shall be retained in the Master Register only if the Bureau is informed that the new assignment has been in use together with ~~the~~ an assignment which was the basis for the unfavourable finding for at least four months without any complaint of harmful interference being made (see Nos. S11.47 and S11.49). If harmful interference is actually caused, the administration responsible for the frequency assignment must on receipt of advice, eliminate the interference.

Reason: For precision.

USA/ /57 SUP  
S11.42

~~Should harmful interference be caused by an assignment recorded under No. S11.41 to any assignment recorded with a favourable finding with respect to S11.32 or S11.33, the station using the former frequency assignment shall, upon receipt of advice thereof, immediately eliminate this harmful interference.~~

Reason: Redundant. The last sentence of No. 5.21 is sufficient.

USA/ /58 MOD  
S11.44

Notwithstanding the date of receipt of the notice by the Bureau, the notified date of bringing into use of an assignment<sup>1</sup> in a satellite network shall be no later than six years following the date of publication of the ~~relevant special section of the Weekly Circular~~ containing the data for advance publication. The notified date of bringing into use will be extended at the request of the notifying administration by not more than three years.

Reason: To make clear that the date of receipt of the notice by the Bureau might occur later than nine years following the date of publication of the relevant special section of the Weekly Circular.

USA/ /59 (MOD)  
S11.44.1

<sup>1</sup> The notified date of bringing into use of an assignment, when recorded in the Master Register, shall be for information only.

Reason: Editorial improvement.

USA/ /60 SUP  
S11.49

~~Where the use of a recorded assignment to a space station is suspended for a period not exceeding eighteen months, the notifying administration shall, as soon as possible, inform the Bureau of the date on which such use was suspended and of the date on which the assignment is to be brought back into regular use. This latter date shall not exceed two years from the date of suspension.~~

Reason: Simplification. This provision is little used.

#### General:

Article S13 appears to be another case where the VGE undersimplified. The functions of the Bureau are given in simple terms by Article 16 of the Constitution together with Article 12 of the Convention (Geneva, 1992). The United States Administration welcomes other administrations' comments as to whether, under such circumstances, the matter need be treated in the Radio Regulations at all.

If WRC-95 deems this Article necessary, then we suggest specific further simplification.

ARTICLE S13

Instructions to the Bureau

USA/ /61 NOC

Section I. Assistance to  
Administrations by the Bureau

Reason: The principal role of the Bureau must continue to be assistance to administrations.

Section II: Maintenance of the Master Register by the Bureau

S13.11 The Bureau shall be solely responsible for maintenance of the Master Register in accordance with the Rules of Procedure and shall in particular:

S13.12 a) following consultation with administrations, from time to time make any necessary adjustments to the format, structure and presentation of data in the Master Register;

USA/ /62 SUP  
S13.13

~~b) periodically, in consultation with administrations, take action to review and improve the accuracy of sections of the Master Register by verifying that the recorded assignments have been brought into regular operation and are being used in accordance with the notified basic characteristics;~~<sup>1</sup>

Reason: Redundant. See CV172, especially "...and keep up to date the Master International Frequency Register...."

USA/ /63 SUP  
S13.13.1

~~1. Whenever the Bureau concludes, as a result of an enquiry with the administration concerned, that an assignment to a space or an earth station was not in use during a period exceeding two years, this assignment shall no longer be taken into account for the application of the procedures of Articles 69 and 811. The procedures of this Chapter shall apply from the date on which it is to be brought back into use;~~

Reason: Consequential to USA/ /62. A MIFR kept up to date per CV172 will contain active assignments.

**General:**

Article S14 implements a procedure for review of Bureau actions. It goes beyond the existing provisions of RR1001.1 and Resolution 35.

These recommendations of the VGE are acceptable.

USA/ /64 NOC

ARTICLE S14

**Procedure for the Review of a Finding  
or Other Decision of the Bureau**

**Reason:** The VGE recommended text is useful to all administrations.

**General:**

In general, the new characteristics of satellite networks or earth or radio astronomy stations set forth in Appendix S4, recommended by the VGE to replace those set forth in Appendices 3, 4, 30, 30A, and 30B, are acceptable. The United States is concerned that the new format may not be as readily understandable as the existing appendices and require more work on the Bureau's part to explain its implementation. Our proposals essentially reintroduce existing text taken from either the existing appendices or the Radio Regulations which we believe will clarify the required data elements and save Bureau resources by not having to explain these data items in other documents.

A principle requiring decision by WRC-95 is "What is simpler?" One must go to three or more documents -- the thinner Radio Regulations, the Rules of Procedure, the Preface to the IFL, Circular-letters, and so on -- to secure answers often now available in the Radio Regulations.

APPENDIX S4

**Consolidated List and Tables of Characteristics  
for use in the Application of the Procedures of Chapter SIII**

ANNEX 1A

**List of characteristics of stations in the terrestrial services<sup>1</sup>**

USA/ /65 MOD

1 Note: The Bureau shall develop and keep up-to-date forms of notice to meet fully the statutory provisions of this Appendix and related decisions of future conferences. ~~A detailed description of items listed in this annex together with an explanation of the symbols is to be found in the~~



~~Preface to the International Frequency List.~~

Reason: The definition of data items is a matter for administrations at a World Radiocommunication Conference. The Preface may suggest additional non-mandatory data which administrations may wish to consider. This annex defines the basic characteristics.

ANNEX 2A

**Characteristics of satellite networks or earth or radio astronomy stations<sup>1</sup>**

USA/ /66 MOD      1 Note: The Bureau shall develop and keep up-to-date forms of notice to meet fully the statutory provisions of this Appendix and related decisions of future conferences. A ~~detailed description of items listed in this annex together with an explanation of the symbols is to be found in the Preface to the International Frequency List.~~

Reason: The definition of data items is a matter for administrations. The Preface may suggest additional non-mandatory data which administrations may wish to consider. This annex defines the basic characteristics.

**A. General characteristics to be provided for the satellite network or the earth or radio astronomy station**

**A.1 Identity of the satellite network or the earth or radio astronomy station**

- a) Identity of a satellite network.
- b) Country and IFRB number (Regions 1 and 3); country and beam identification (Region 2).
- c) Country and beam identification.
- d) Country and identification of the allotment; for a network not derived from the Allotment Plan, the identity of the network.
- e) Identity of an earth or radio astronomy station:
  - 1) the type of earth station (specific or typical);
  - 2) the name by which the station is known or the name of the locality in which it is situated;
  - 3) for a specific earth station:

- USA/ /67 MOD                    -     the country or geographical area in which the station is located; using the symbols from the Preface to the International Frequency List;

Reason:            To indicate where the acceptable list of country or geographical area symbols can be found.

- the geographical coordinates of each transmitting and receiving antenna site comprising the earth station (longitude and latitude in degrees and minutes as well as the seconds with an accuracy of one-tenth of a minute; the seconds need only be furnished if the coordination area of the earth station overlaps the territory of another administration.).

4)     for a radio astronomy station:

- USA/ /68 MOD                    -     the country or geographical area in which the station is located; using the symbols from the Preface to the International Frequency List;

Reason:            To indicate where the acceptable list of country or geographical area symbols can be found.

- the geographical coordinates of the station site (longitude and latitude in degrees and minutes).

- USA/ /69 MOD            f)     Country symbol of the notifying administration. In the case of advance information, give the symbol of the administration or the symbols of the administrations in the group submitting the advance information on the satellite network.

Reason:            To identify, for the case of a group of administrations, the administrations that are to be associated with the submission of the advance information.

A.2     Date of bringing into use

- USA/ /70 MOD            a)     The date (actual or foreseen, as appropriate) of bringing the frequency assignment (new or modified) into use. Whenever the assignment is changed in any of its basic characteristics (except in the case of a change in Item A.1.a), date to be given shall be that of the latest change (actual or foreseen, as appropriate).

Reason:            To restore Appendix 3 item 2.A.2.b.

- b)     For the case of a space station aboard a geostationary satellite the period of validity of the frequency assignments (see Resolution 4 (Rev.Orb-88)).
- c)     The date (actual or foreseen, as appropriate) when reception of the frequency band either begins or when any of the basic characteristics are modified.

USA/ /71 MOD      A.3    Operating administration or ~~company~~ entity

Symbols for the operating ~~agency~~ administration or entity and for the address of the administration to which communication should be sent on urgent matters regarding interference, quality of emissions and questions referring to the technical operation of the network or station (see Article S15 of the Radio Regulations).

Reason:      To use a generic term for other than the administration. The term entity would encompass companies, other government agencies, etc.

A.6    Agreements

USA/ /72 MOD      a)    If appropriate, the country symbol of any administration with which agreement has been reached; including where the agreement is to exceed the limits prescribed in these Regulations.

Reason:      Consequential to the deletion of No. A.6.b.

USA/ /73 SUP      ~~b)    If appropriate, the country symbol of any administration with which agreement has been reached in accordance with Article S9 of these Regulations.~~

Reason:      Subparagraph (b) is not needed since subparagraph (a) pertains to all cases where an agreement has been reached.

A.7    Earth station site characteristics

For a specific earth station:

USA/ /74 MOD      a)    The horizon elevation angle in degrees for each azimuth around the earth station.

b)    The planned minimum angle of elevation of the antenna in the direction of maximum radiation in degrees from the horizontal plane having due regard to possible inclined-orbit operation of the associated space station.

Reason:      To restore the wording in Appendix 3 to clarify that the minimum elevation angle of an earth station should take into account any planned inclined-orbit operation of the associated geostationary space station.

USA/ /75 MOD      c)    The planned range of operating azimuthal angles for the direction of maximum radiation in degrees, clockwise from True North, having due regard to possible inclined-orbit operation of the associated space station.

Reason:      To restore the wording in Appendix 3 to clarify that the azimuthal limits of an earth station should take into account any planned inclined-orbit operation of the associated geostationary space

station.

- d) The altitude (metres) of the antenna above mean sea level.

USA/ /76 MOD

- A.10 Earth station coordination area diagrams. The diagrams shall be drawn to an appropriate scale indicating for both transmission and reception the location of the earth station and its associated coordination areas, or the coordination area related to the service area in which it is intended to operate the mobile earth station.

Reason: To define the diagrams as presently contained in RR1113.

USA/ /77 (MOD) B. Characteristics to be provided for each satellite antenna beam or each earth or radio astronomy station antenna

Reason: Radio astronomy should be two words.

USA/ /78 MOD B.1 The designation of the satellite antenna beam and, if appropriate, an indication as to whether it is a steerable or reconfigurable antenna beam. The designation shall be a three character code, and the last character shall be an "R" if steerable or reconfigurable.

Reason: To define for administrations the data base field size and structure of the beam designator. The additional sentence also aligns with similar text in Appendices 3 and 4.

B.3 Geostationary space station antenna characteristics

- a) Where it is intended to communicate with an earth station via an antenna pointing in a fixed direction:
- 1) the maximum isotropic gain (Dbi),
  - 2) the antenna gain contours plotted on a map of the Earth's surface, preferably in a radial projection from the satellite onto a plane perpendicular to the axis from the centre of the Earth to the satellite. The space station antenna gain contours shall be drawn as isolines of the isotropic gain, at least for -2, -4, -6, -10 and -20 Db and at 10 Db intervals thereafter, as necessary, relative to the maximum antenna gain, when any of these contours is located either totally or partially anywhere within the limit of visibility of the Earth from the given geostationary satellite. Whenever possible the gain contours of the space station receiving antenna should also be provided in the form of a numerical equation.

b) Where a steerable beam (see No. 183) is used:

- 1) the maximum isotropic antenna gain (dBi) if the effective boresight area (see No. 168A) is identical with the global or nearly global service area; the maximum antenna gain is applicable to all points on the Earth's visible surface;

USA/ /79 (MOD)

- 2) the maximum antenna gain and the effective antenna gain contours (see No. 168B) if the effective boresight area (see No. 168A) is less than the global or nearly global service area. These contours shall be provided as defined in ~~a)~~ B.3.a.2 above.

Reason: For specificity so there is no confusion as to which subparagraphs are being referenced.

USA/ /80 (MOD)

- c) Include, in the antenna gain contours of ~~a)-2)~~ B.3.a.2 and ~~b)-2)~~ B.3.b.2 above, the effect of the planned longitudinal tolerance, inclination excursion and pointing accuracy of the antenna.

Reason: For specificity so there is no confusion as to which subparagraphs are being referenced.

- d) The pointing accuracy of the antenna.
- e) The antenna radiation pattern where the antenna radiation beam is directed towards another satellite.
- f) The gain of the antenna in the direction of those parts of the geostationary-satellite orbit which are not obstructed by the Earth, in the case of operation in a band allocated in the Earth-to-space direction and in the space-to-Earth direction;
- g) For the case of a space station submitted in accordance with Appendix S30, Appendix S30A or Appendix S30B:
  - 1) maximum isotropic antenna gain (dBi);
  - 2) shape of the beam (elliptical, circular, or other);
  - 3) for circular beams:
    - half-power beamwidth in degrees;
    - co-polar and cross-polar radiation patterns;
    - nominal intersection of the antenna beam axis with the Earth (boresight longitude and latitude);

- 4) for elliptical beams:
  - co-polar and cross-polar radiation patterns;
  - rotational accuracy in degrees;
  - major axis orientation in degrees anticlockwise from the Equator;
  - major axis beamwidth (degrees) at the half-power points;
  - minor axis beamwidth (degrees) at the half-power points;
  - nominal intersection of the antenna beam axis with the Earth (boresight longitude and latitude);
- 5) for beams of other than circular or elliptical shape:
  - co-polar and cross-polar gain contours plotted on a map of the Earth's surface;
- 6)  $\Delta G$  (difference between the maximum gain and the gain in the direction of the point in the service area at which the power flux-density is at a minimum - for Regions 1 and 3 only).

USA/ /81 (MOD) C. Characteristics to be provided for each group of frequency assignments for a satellite antenna beam or an earth or radio\_astronomy station antenna

Reason: Radio astronomy should be two words.

C.2 Assigned frequency (frequencies)

USA/ /82 MOD a) The assigned frequency (frequencies), as defined in No. 142, in kHz up to 28 000 kHz inclusive, in MHz above 28 000 kHz to 10 500 MHz inclusive and in GHz above 10 500 MHz.

Reason: To reinstate the explanation of units of frequencies as described in Appendix 3.

If the basic characteristics are identical, with the exception of the assigned frequency, a list of frequency assignments can be provided.

USA/ /83 MOD                      b)    The centre of the frequency band observed, in kHz up to 28 000 kHz inclusive, in MHz above 28 000 kHz to 10 500 MHz inclusive and in GHz above 10 500 MHz.

Reason:            To reinstate the explanation of units of frequencies as described in Appendix 3.

USA/ /84 MOD            C.4    Class of station(s) and nature of service

The class of station and nature of service performed using the symbols shown in the Preface to the International Frequency List.

Reason:            To indicate where the acceptable list of class-of-station and nature-of-service symbols can be found.

C.5    Receiving system noise temperature

USA/ /85 MOD                      a)    For the case of a space station the lowest total receiving system noise temperature in kelvins, referred to the output of the receiving antenna of the space station.

Reason:            To clarify that the value to be provided is the lowest value.

USA/ /86 MOD                      b)    For the case of an earth station the lowest total receiving system noise temperature in kelvins, referred to the output of the receiving antenna of the earth station under clear sky conditions. This value shall be indicated for the nominal value of the angle of elevation when the associated transmitting station is aboard a geostationary satellite and, in other cases, for the minimum value of the angle of elevation.

Reason:            To define the conditions under which the lowest value is determined.

c)    For the case of a radio astronomy station, the overall receiving system noise temperature in kelvins, referred to the output of the receiving antenna.

C.6    Polarization

USA/ /87 MOD                      -       The type of polarization and, if appropriate, sense of polarization of the antenna, using symbols shown in the Preface to the International Frequency List.

Reason:            To indicate where the acceptable list of polarization-type symbols can be found.

USA/ /88 SUP - Indication as to whether consent is given to the general use of this information in determining the need for coordination with other satellite networks according to Appendix S8 of the Radio Regulations.

Reason: Consequential to USA/ /94, below.

C.10 Type and identity of the associated station(s)

The associated station may be another space station, a typical earth station of the network or a specific earth station.

- a) For an associated space station, its identity.
- b) For a specific associated earth station, the identity of the earth station and the geographical coordinates of the antenna site.
- c) For an associated earth station (whether specific or typical):

USA/ /89 MOD 1) the class of station(s) and nature of service performed, using the symbols shown in the Preface to the International Frequency List;

Reason: To indicate where the acceptable list of class-of-station and nature-of-service symbols can be found.

- 2) the isotropic gain (dBi) of the antenna in the direction of maximum radiation (see No. 154);
- 3) the beamwidth in degrees between the half power points (describe in detail if not symmetrical);
- 4) either the measured radiation diagram of the antenna or the reference radiation diagram;
- 5) the lowest total receiving system noise temperature in kelvins referred to the output of the receiving antenna of the earth station under clear sky conditions when the associated station is a receiving earth station;
- 6) the antenna diameter (metres).

USA/ /90 MOD C.12 Required protection ratio

The minimum acceptable aggregate carrier-to-interference ratio, if less than 26 dB. The carrier-to-interference ratio is to be expressed in terms of the power averaged over the necessary bandwidth of the modulated wanted and interfering signals, assuming both the desired carrier and interfering signals have equivalent bandwidths and signal modulation types.

Reason: To insert text from Annex 2 of Appendix 30B which defines the carrier-to-interference ratio.



**D. Overall link characteristics**

**D.2 Transmission gains and associated equivalent satellite link noise temperatures**

For each entry under D.1:

USA/ /91 MOD                      a)     The lowest equivalent satellite link noise temperature and the associated transmission gain. These values shall be indicated for the nominal value of the angle of elevation.

Reason:     To define the conditions under which the values of equivalent satellite link noise temperature and transmission gain are determined.

USA/ /92 MOD                      b)     The values of transmission gain and associated equivalent satellite link noise temperature that correspond to the highest ratio of transmission gain to equivalent satellite link noise temperature. The transmission gain is evaluated from the output of the receiving antenna of the space station to the output of the receiving antenna of the earth station.

Reason:     To define the conditions under which the values of equivalent satellite link noise temperature and transmission gain are determined.

**ANNEX 2B**

USA/ /93 (MOD)     **Table of characteristics to be submitted for space and radio\_astronomy services**

Reason:     Radio astronomy should be two words.

USA/ /94 MOD                      Polarization (item C.6) should be mandatory for all cases in Annex 2B.

Reason:     Information required to determine which administrations are affected or which networks require coordination should be mandatory. Making polarization mandatory would help any administration in reducing the number of cases where any given proposal affects it, thereby reducing the number of comments under advance publication. Also, requiring polarization during the coordination phase could reduce the number of networks that exceed the threshold value for coordination. Polarization is a mandatory item for Appendices 30 and 30A.

USA/ /95 MOD                      Antenna gain (item C.10.c.2) should be mandatory, in conjunction with item C.10.c.4, for advance publication.

Reason:     So that an administration can determine which reference radiation pattern should be applied. That is, the antenna gain is needed to determine the antenna-diameter-to-wave-length ratio.

USA/ /96 MOD      The radiation pattern (item C.10.c.4) should be mandatory for advance publication.

Reason:      To accurately determine which networks may be affected by a newly published satellite network, the off-axis antenna gain is needed for interference analyses. Providing this information at the advance publication phase could reduce the number of administrations commenting on the advance publication special section.

General:

Our proposals, in part, reintroduce text taken from the existing Radio Regulations (RR) back into the body of the RR. We believe that these improvements will help reduce the number of unnecessary coordinations.

## APPENDIX S5

### IDENTIFICATION OF ADMINISTRATIONS WITH WHICH COORDINATION IS TO BE EFFECTED UNDER THE PROVISIONS OF ARTICLE S9

USA/ /97 SUP      Paragraphs 1 and 2.

Reason:      Consequential to proposal to place this text in Article S9.

USA/ /98 MOD

3. For each of the frequency assignments to an individual station or to a satellite network mentioned in ~~paragraph 1 above~~ Nos. S9.X-S9.X, the level of interference shall be determined using the method referred to in Table S5-1, that is appropriate to the particular case.

Reason:      Consequential to the suppression of paragraphs 1 and 2.

4. The assignment is considered to be affected, and coordination must be sought under the procedure of Article S9, if

a) the interference level exceeds the threshold level given in the Table S5-1, or

USA/ /99 (MOD)

b) the condition specified in the Table S5-1 is applicable (e.g., there is overlap between the frequency bandwidths).

Reason:      To correct punctuation.

TABLE S5-1

**Technical conditions for coordination**  
(See Article S9)

- USA/ /100 MOD      The frequency-bands columns should include all frequency bands. If the bands are too numerous to practicably be included in Table S5-1, then they should be included in Appendix S5 as a supplemental table, e.g., Table S5-1B.
- Reason:      Table S5-1 should be a comprehensive source of information without having to resort to other documents or research to determine the applicability of this table.
- USA/ /101 (MOD)      In the cases of No. S9.7, S9.8, and S9.9; modify the calculation method column to read Appendix S8 instead of Appendix S29.
- Reason:      The calculation method pertains to the existing Appendix 29 which has been changed to Appendix S8 in the VGE Report.
- USA/ /102 MOD      In the case of No. S9.8, the expressions for determining the power flux-density (pfd) values (from Annex 4 of Appendix S30) should be included in the calculation method column.
- Reason:      The expressions from Annex 4 of Appendix S30 should be included in Table S5-1 to avoid unnecessary reference to another appendix to find the information.
- USA/ /103 MOD      In the case of No. S9.9, text should be added to the Remarks column as follows:
- The threshold/conditions do not apply when the geocentric angular separation, between a transmitting space station in the fixed-satellite service and a receiving space station in the feeder-link Plan, exceeds 150° of arc and the free-space power flux-density of the transmitting space station in the fixed-satellite service does not exceed a value of -137 dB(W/m<sup>2</sup>/MHz) on the surface of the Earth at the equatorial Earth limb.
- Reason:      The complete threshold/conditions (T/C) need to be included in No. S9.9. The above text takes into account all of paragraph 1 of Annex 4 to Appendix S30A.
- USA/ /104 (MOD)      In the case of No. S9.10, modify the calculation method column to read Appendix S8 instead of Appendix S29.
- Reason:      The calculation method pertains to the existing Appendix 29 which has been changed to Appendix S8 in the VGE Report.
- USA/ /105 MOD      In the case of No. S9.11, the pertinent ITU-R recommendation should be cited.
- Reason:      The specific ITU-R recommendation should be included in this Table to avoid unnecessary work in determining the correct ITU-R recommendation.
- USA/ /106 MOD      In the case of No. S9.14, we recommend "See Table S5-1A" be

added to the T/C column.

Reason: Although "See Table S5-1A" appears in the Frequency bands and Remarks columns, we believe it is important to include it in the (T/C) column since the pfd values are listed in Table S5-1A.

USA/ /107 MOD In the case of No. S9.15, add two additional methods for determining earth station coordination areas, in addition to Appendix S7 and that for the radiodetermination-satellite service which have been identified, as follows:

1) The coordination area of aircraft earth stations is determined by increasing its service area by 1000 km vis-a-vis the aeronautical mobile service (terrestrial) or 500 km vis-a-vis terrestrial services other than aeronautical mobile.

2) For receiving earth stations in the meteorological-satellite service in frequency bands shared with the meteorological aids service, the coordination distance is considered to be the visibility distance as a function of the earth station horizon elevation angle for a radiosonde at an altitude of 20 km above mean sea level, assuming 4/3 Earth radius.

Reason: These additional methods are presently in the Rules of Procedure and should be included in this Table to avoid unnecessary reference to another document.

USA/ /108 MOD In the case of No. S9.15, delete "~~(See Appendix S5)~~" at the end of the remarks column.

Reason: Since this text is already in Appendix S5, it appears pointless to refer to Appendix S5.

Reference of Article S9	Calculation Method	Remarks
USA/ /109 MOD		
3.4 h) Non-GSO -		See also Table S5-1A1
<hr/>		
1	<u>Coordination with the Fixed Service of an administration is not required in the bands 2160-2200 MHz or 2500-2535 MHz if</u>	
a)	<u>the frequency assignments recorded in the Master Register with a favourable finding with respect to S11.31, or not notified but in use or planned to be brought into use within the next 3 years, use analogue modulation and the pfd radiated over the territory of this administration into these frequency assignments does not exceed the thresholds in MOD RR 2566, or</u>	
b)	<u>the frequency assignments recorded in the Master Register with a favourable finding with respect to S11.31, or not notified but in use or planned to be brought into use within the next 3 years, use</u>	

terrestrial

USA/ /110 MOD

3.4 j)

...coordination  
distance of  
1000 km.<sup>2</sup>

Reason: To eliminate unnecessary coordination for some services meeting technical conditions. This incorporates improvements studied by the ITU-R into the coordination procedure.

As a consequential change to the U.S. proposal to make polarization a mandatory data element for all cases in Appendix S4, i.e., USA/ /94, the United States is proposing to modify Appendix S8. This proposal would incorporate by reference the earth station radiation patterns set forth in ITU-R Recommendation 465 in relation to those set forth in ITU-R Recommendation 731.

---

digital modulation and the fractional degradation of performance caused into reference digital fixed service assignments located in the territory of this administration does not exceed the thresholds in MOD RR 2566, and

- c) the application of the simulation (standard computation method described in ADD Appendix ZZZ) to reference fixed service frequency assignment located in the territory of this administration results in an interference level which does not exceed the limits indicated in [Doc. WP CPM/8].

Coordination with the Fixed Service of an administration is not required in the band 2483.5-2500 MHz if the frequency assignments recorded in the Master Register with a favourable finding with respect to S11.31, or not notified but in use or planned to be brought into use within the next 3 years, and the PFD produced at the earth's surface by emissions from space stations radiated over the territory of this administration into these frequency assignments does not exceed the following thresholds:

-150 dB(W/m<sup>2</sup>) in any 4 kHz band for angles of arrival between 0 and 5 degrees above the horizontal plane;

-150 + 0.65( -5) dB(W/m<sup>2</sup>) in any 4 kHz band for angles of arrival (in degrees) between 5 and 25 degrees above the horizontal plane;

-137 dB(W/m<sup>2</sup>) in any 4 kHz band for angles of arrival between 25 and 90 degrees above the horizontal plane.

These limits relate to the power flux-density which would be obtained under assumed free-space propagation conditions.

<sup>2</sup> In the bands above 1 GHz, for those assignments to be made within the context of [ITU-R-IS-849], the coordination area is as determined therein.

APPENDIX S8

Method of Calculation for Determining if Coordination is Required

2.2.3 Consideration of polarization isolation

USA/ /111 MOD

The polarization isolation factor described in this paragraph shall be ~~considered only if the administration responsible for each network has consented to such a course and has notified its polarization or published it for use to determine if coordination under No. 1060 3.4.a (S9.7) is required.~~ In this case, the apparent increase in the equivalent satellite link noise temperature shall be determined by the following expressions:

$$\text{Case I} \quad \Delta T = \frac{\gamma \Delta T_s}{Y_u} + \frac{\Delta T_e}{Y_d}$$

$$\text{Case II} \quad \Delta T = \frac{\gamma \Delta T_s}{Y_{ss}}$$

where the values of  $\Delta T_s$  and  $\Delta T_e$  are those given in §2.2.1 and §2.2.2 and the values of the factors of polarization isolation  $Y_u$ ,  $Y_d$  and  $Y_{ss}$  are ~~those given in the table below determined using the equations in ITU-R Recommendation 465 in relation to those in ITU-R Recommendation 731.~~

Reason: Consequential to USA/ /94.  
USA/ /112 SUP

~~RESOLUTION No. 110 (Orb 88)~~

~~Improved Procedures for Certain Bands  
of the Fixed Satellite Service  
Is Known~~

Reason: Consequential to USA/ /48.

USA/ /113 ADD

## RESOLUTION No. USA-S10

Relating to the Possible Bringing Into Use  
of Article S10 under Certain Conditions  
once the Definitive Decision on  
VGE Recommendation No. 2/5  
Is Known

The World Radiocommunication Conference (Geneva, 1995),

*considering*

- a. that preceding conferences have developed plans;
- b. that these plans may relate to assignments or to allotments;
- c. that assignment and allotment plans fundamentally differ as to the complexity of their maintenance;
- d. that, in addition to worldwide plans, regional plans exist catered to specialised needs in a particular part of the world;
- e. that plans, by their nature, are dated;

*considering in particular*

- a. that the Voluntary Group of Experts is to be commended for fostering the belief that a single plan modification procedure might suffice;
- b. that the question of universal applicability of one procedure requires greater consideration than most;

*noting*

- a. that most plans are accompanied by a dedicated procedure specifically catered to that plan's updating;

*recognising*

a. that in Recommendation No. 2/5 the VGE foresaw the possible treatment of that Recommendation at WRC-97 with respect to its possible applicability to the world plans of Appendices 30 and 30A;

b. that in like manner it foresaw the need to decide upon Recommendation No. 2/5 before treating the applicability of Article S10;

*is of the opinion*

that one universal plan modification procedure could contribute complications rather than enhance simplicity, and

*is of the further opinion*

a. that, for this reason, great care must be exercised before deciding upon this question;

b. that the answer thereto may depend, in part, upon whether the plan has been drawn up by a world radiocommunication conference or by a regional radiocommunication conference;

*resolves*

a. that this conference, in reviewing VGE Recommendation No. 2/4, has decided to incorporate the existing plan modification procedure for Appendix S25 within that Appendix, thereby rendering it self-contained for simplification of use;

b. that this conference, in reviewing VGE Recommendation No. 2/5, has decided to defer to a future world radio conference the question of whether Article S10 should be applied to the world plans of Appendices 30 and 30A;

c. that, consequential to the above and with regard to VGE Recommendation No. 2/6, no further action is required on Appendix S6, and the relevant provisions of Appendices 30 and 30A shall continue in force;

d. that this conference, in reviewing VGE Recommendation No. 2/7, has decided not to modify Appendices 26, 27 and 30B;

e. that the matter of one universal modification procedure for all plans, or all subsequent plans, has not matured for decision at this conference; and

f. that Article S10 appearing in Annex 1 be considered by future regional radio conferences or world radio conferences for possible application to future plans.

Reason: To act upon four VGE Recommendations.



# Annex 1 to **RESOLUTION NO. USA-S10**

ARTICLE S10		<p><u>General Statement applicable to the whole of Article S10</u></p>
	VGE Note 1  Procedure for Modification of a Frequency Allotment or Assignment Plan	
S10.1	4.1 For all world frequency allotment or assignment plans contained in Appendices to these Regulations, the Bureau shall maintain the master copies of the plans, incorporating any agreed modifications <sup>VGE Note 7</sup> , and shall provide such copies in an appropriate form for publication by the Secretary-General when justified by circumstances.	<p>This new Article S10 embodies the principles adopted by the VGE for dealing the Simplified Procedures, especially:</p> <p>a) the means of identifying affected administrations;</p> <p>b) transparency in operation of the procedure; and</p> <p>c) automatic termination of the procedure with no open end.</p>
S10.2	4.2 Before notifying any assignment which is subject to a plan the administration shall ensure that it is in conformity with the plan. If the assignment is not in conformity the administration shall apply the procedure <sup>VGE Note 8</sup> to effect an appropriate modification to the plan by seeking the agreement of the administrations, which are identified in accordance with Appendix S6, as having planned allotments or assignments which may be affected by the proposed modification.	
S10.2.1	4.2.1 An assignment is subject to a plan when it is for a station in a radiocommunication service and in a frequency band and in a geographical area covered by a plan. An assignment is in conformity with the plan, if it appears in the plan, or corresponds to an allotment in the plan, or if the procedure for modification of the plan has been successfully applied.	

VGE Note 1 The scope of application of Article S10 to be decided by the WRC-95.

VGE Note 7 Regional plans have legally different sources and status from the plans so far made by WARC's and attached as Appendices to the Radio Regulations. As such the regional plans are not open to any modification by a future world radio conference. It would NOT therefore be possible for the WRC-95 to modify the procedures of these regional plans. It would, however, be possible for the WRC to consider the potential value of the Simplified Procedures to these plans and to adopt Recommendations to the appropriate future regional conferences urging substitution, to the maximum feasible extent, of elements of the Simplified Procedures.

VGE Note 8 The WRC-95 will need to decide whether this Article is to be applied to the Plans of Appendices 25, 30 and 30A. The VGE recommends that it should NOT be applied to the Plans of Appendices 26, 27 and 30B.